

Fluor Hanford, Inc.  
Post Office Box 1000  
Richland, Washington 99352

0060727

**FLUOR**

**Memorandum**

To:	S. J. Trent	Date:	T4180-03-SLF-043
From:	S. L. Fitzgerald, Manager WSCF Analytical Services	<i>[Handwritten Signature]</i>	Telephone: 373-7495
cc:	W/Attachments T. F. Dale S. L. Fitzgerald H. K. Meznarich J. E. Trechter	W/O Attachments S3-28 M. Neely S3-30 D. Hart S3-30 L. C. Swanson S3-30 File/LB	S3-30 S3-30 E6-35 File/LB
Subject:	FINAL RESULTS FOR 200-PW-2/200-PW-4 OU- BOREHOLE SOIL SAMPLING- SAMPLE DELIVERY GROUP <b>WSCF20031154</b> , SAF NUMBER F03-006		

References: (1) Groundwater Protection Program-Letter of Instruction, FH-EIS-2003-MEN-001,  
October 31, 2002  
  
(2) HNF-SD-CD-QAPP-017, Rev. 5, Waste Sampling and Characterization Facility  
Quality Assurance Plan

This letter contains a narrative (Attachment 1) for the sample delivery group (WSCF20031154),  
the analytical results (Attachment 2) and the sample receipt information (Attachment 3).

slf/ddw

Attachments 3

**RECEIVED**  
NOV 24 2003  
**EDMC**



<b>Sample Delivery Group</b>	<b>WSCF20031154</b>
<b>Sample Matrix</b>	<b>Soil</b>
<b>Sample Visual</b>	<b>Brown</b>
<b>SAF Number</b>	<b>F03-006</b>
<b>Data Deliverable</b>	<b>Summary Report</b>

### Introduction

One (1) soil sample (B173V7) from the GPP was received at the WSCF Laboratory on August 25, 2003. The sample was analyzed for those analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Protection Program- Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Request for Sample Analysis forms are included as Attachment 3.

### Analytical Methodology for Requested Analyses

- PCB's by EPA SW-846 Method 8082. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8 and ICP-AES Metals by EPA SW-846 Method 6010A. Analytical work was performed with no deviations to the approved method.
- Semi-VOA's by EPA SW-846 Method 8270B. Analytical work was performed with no deviations to the approved method.
- Alcohols and Glycols by EPA SW-846 Method 8015. Analytical work was performed with no deviations to the approved method.
- WTPH-D by WDOE Method NWTPH-Dx. Analytical work was performed with no deviations to the approved method.
- WTPH-G by WDOE Method NWTPH-Gx. Analytical work was performed with no deviations to the approved method.
- IC Anions and Ammonium by EPA SW-846 Method 300.0 and 300.7. Analytical work was performed with no deviations to the approved method for Ammonium, but a deviation was required for the Anions (see comments below).

- The pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.
- Percent Solids by EPA Method 160.3. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA SW-846 Method 9010. Analytical work was performed with no deviations to the approved method.
- All RadChem analyses (AEA's, GEA) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

### Comments

PCB's – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-28 and 2-29 for QC details.

ICP-AES and ICP-MS Metals – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-20, 2-21, 2-31, 2-32, 2-33, and 2-34 for QC details.

Semi-VOA's – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-22, 2-23, 2-24, 2-25, 2-26 and 2-27 for QC details. Compounds listed on the tentatively identified peak report with an "N" qualifier have been identified with the program used to interpret the raw data.

Alcohols and Glycols – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-38 for QC details.

WTPH-D – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-30 for details.

WTPH-G – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-39 for details.

IC Anions – The client requested hold time(s) for this analysis was not met. The client was notified and requested WSCF to continue with this analysis. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-36 and 2-37 for QC details.

NH4 – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-35 for QC details.

Percent Solids – PCB's, Semi-VOA's, Alcohols and Glycols, WTPH-G and WTPH-D analytical results were corrected for percent solids. All other analytical results were reported for the sample as received.

CN – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-17 for QC details.

RadChem – There are no hold times associated with these WDOE accredited methods. Except for GEA, a Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-16, 2-18, 2-19, 2-40 and 2-41 for QC details.

This Summary Report is in compliance with the SOW, both technically and for completeness. Release of the data contained in this hard copy report has been authorized by the WSCF Laboratory Analytical Manager and Client Services, as verified by the following signature.



Troy Dale  
WSCF Production Control

#### Abbreviations

Hg – mercury  
IC – ion chromatography  
ICP – inductively coupled plasma  
ICP/AES – ICP/atomic emission spectroscopy  
ICP/MS – ICP/mass spectrometry  
Total U – total uranium  
AT/TB – total alpha/total beta  
AEA – Alpha Energy Analysis  
WTPH-G – Total Hydrocarbons-Gasoline

Am – americium  
Cm - curium  
Pu – plutonium  
Np – neptunium  
GEA – gamma energy analysis  
H3 – Tritium  
Sr – Strontium 89, 90  
WTPH-D – Total Hydrocarbons-Diesel  
TSS – Total Suspended Solids

**T4180-03-SLF-043**

**ATTACHMENT 1**

**NARRATIVE**

Consisting of 3 pages  
Cover page not included

**T4180-03-SLF-043**

**ATTACHMENT 2**

**ANALYTICAL RESULTS**

Consisting of 41 pages  
Cover page not included

**WSCF**  
**ANALYTICAL RESULTS REPORT**

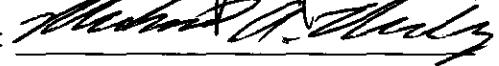
for

**Ground Water Protection Program**

**Richland, WA 99352**

**Attention: Steve Trent**

Analytical: 

Client Services: 

*All results are reported on an "as received" basis unless otherwise noted in the comment section.*

Confidentiality Notice: The information contained in this report is privileged and confidential information intended only for the use of the addressee. If the reader of this report is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone at (509) 373-7020.

Contract#: F03-006  
Report#: WSCF20031154  
Report Date: 23-sep-2003  
Report WGPP/ver. 1  
Ground Water Protection Program

# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**Project:** F03-006: 200-PW-2/PW-4

**Group #:** WSCF20031154

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze Sample Receive		
W030000723	B173V7	GPP	TRENT	57-12-5	Cyanide	SOIL	LA-695-402	< 0.200	mg/kg	1.00	0.20	09/03/03 08/22/03 08/25/03	
W030000723	B173V7	GPP	TRENT	NH4-N	Nitrogen in ammonium	SOIL	LA-503-401	B	0.393	mg/kg	49.00	0.20	09/18/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	TS	Total solids	SOIL	LA-519-412		93.2	%	1.00	0.0	08/27/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	PH	pH Measurement	SOIL	LA-212-411		8.90	pH	1.00	0.010	08/27/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	60-29-7	Diethyl ether	SOIL	Organics	U	< 5.00e+03	ug/kg	1.00	5.0e+03	09/03/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	67-56-1	Methanol	SOIL	Organics	U	< 1.00e+03	ug/kg	1.00	1.0e+03	09/03/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	107-21-1	Ethylene glycol	SOIL	Organics	U	< 5.00e+03	ug/kg	1.00	5.0e+03	09/03/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	14596-10-2	Americium-241	SOIL	LA-508-471		0.0880	pCi/g	1.00	0.051	09/02/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Am-241 by AEA Total Cntg Error	SOIL	LA-508-471	+-	0.0414	pCi/g	1.00	0.0	09/02/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	16984-48-8	Fluoride	SOIL	LA-533-410	U	< 0.343	mg/kg	49.00	0.34	09/08/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	16887-00-6	Chloride	SOIL	LA-533-410	B	1.21	mg/kg	49.00	0.69	09/08/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.441	mg/kg	49.00	0.44	09/08/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410		45.2	mg/kg	49.00	0.24	09/08/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	14265-44-2	Phosphate	SOIL	LA-533-410	U	< 0.637	mg/kg	49.00	0.64	09/08/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	14808-79-8	Sulfate	SOIL	LA-533-410	B	23.5	mg/kg	49.00	1.2	09/08/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	10198-40-0	Cobalt-60	SOIL	LA-508-462		0.0576	pCi/g	1.00	0.017	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Co-60 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	0.0194	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	14234-35-6	Antimony-125	SOIL	LA-508-462	U	0.0232	pCi/g	1.00	0.044	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Sb-125 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	0.0258	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	13967-70-9	Cesium-134	SOIL	LA-508-462	U	0.0451	pCi/g	1.00	0.021	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Cs-134 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	0.0143	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	10045-97-3	Cesium-137	SOIL	LA-508-462	U	-1.86e-03	pCi/g	1.00	0.017	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Cs-137 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	0.0104	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	14683-23-9	Europium-152	SOIL	LA-508-462	U	-0.0342	pCi/g	1.00	0.046	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Eu-152 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	0.0503	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	15585-10-1	Europium-154	SOIL	LA-508-462	U	-0.0263	pCi/g	1.00	0.053	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Eu-154 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	0.0321	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03

**MDL=Minimum Detection Limit**

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

E - Analyte is an estimate, has potentially larger errors

**RQ=Result Qualifier**

J - Estimated Value

U - Analyzed for but not detected above limiting criteria.

**DF=Dilution Factor**

- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

**Report WGPP/ver. 1**

**Ground Water Protection Program**

# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent      **Group #:** WSCF20031154  
**Project:** F03-006: 200-PW-2/PW-4

<b>Sample #</b>	<b>Client ID</b>	<b>CAS #</b>	<b>Test Performed</b>	<b>Matrix</b>	<b>WSCF</b>		<b>Unit</b>	<b>DF</b>	<b>MDL</b>	<b>Analyze Sample</b>	<b>Receive</b>		
					<b>Method</b>	<b>RQ</b>							
W030000723	B173V7	GPP	TRENT	14391-16-3	Europium-155	SOIL	LA-508-462	U	0.0229	pCi/g	1.00	0.068	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Eu-155 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	0.0431	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	15832-50-5	Tin-126	SOIL	LA-508-462	U	0.254	pCi/g	1.00	0.35	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Sn-126 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	0.0566	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	15262-20-1	Radium-228	SOIL	LA-508-462		0.990	pCi/g	1.00	0.054	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Ra-228 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	0.166	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	13982-63-3	Radium-226	SOIL	LA-508-462		0.753	pCi/g	1.00	0.031	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Ra-226 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	0.126	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	13982-39-3	Zinc-65	SOIL	LA-508-462	U	0.0747	pCi/g	1.00	0.044	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Zn-65 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	0.0300	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	14681-63-1	Niobium-94	SOIL	LA-508-462	U	-4.89e-04	pCi/g	1.00	0.015	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Nb-94 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	4.89e-03	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	13968-53-1	Ruthenium-103	SOIL	LA-508-462	U	-1.80e-03	pCi/g	1.00	0.015	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Ru-103 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	8.93e-03	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	13967-48-1	Ruthenium-106	SOIL	LA-508-462	U	0.0135	pCi/g	1.00	0.14	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Ru-106 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	0.0832	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	13966-06-8	Tin-113	SOIL	LA-508-462	U	-4.48e-05	pCi/g	1.00	0.020	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Sn-113 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	4.48e-04	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	14762-78-8	Cerium-144	SOIL	LA-508-462	U	0.0469	pCi/g	1.00	0.12	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Ce-144 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	0.0821	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	14913-50-9	Thallium-208	SOIL	LA-508-462		0.338	pCi/g	1.00	0.016	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Tl-208 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	0.0561	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	14913-49-6	Bismuth-212	SOIL	LA-508-462		0.669	pCi/g	1.00	0.13	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Bi-212 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	0.152	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	15092-94-1	Lead-212	SOIL	LA-508-462		1.04	pCi/g	1.00	0.031	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	Pb-212 Rel. Count Error (GEA)	SOIL	LA-508-462	+-	0.144	pCi/g	1.00	0.0	09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	14733-03-0	Bismuth-214	SOIL	LA-508-462		0.753	pCi/g	1.00	0.031	09/25/03 08/22/03 08/25/03

**MDL=Minimum Detection Limit**  
**RQ=Result Qualifier**

B - The analyte < the RDL but > = the IDL/MDL (inorganic)  
J - Estimated Value

E - Analyte is an estimate, has potentially larger errors  
U - Analyzed for but not detected above limiting criteria.

**DF=Dilution Factor**

-- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

*Report WGPP/ver. I*

*Ground Water Protection Program*

# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:  
Project:**

Steve Trent  
FO3-006: 200-PW-2/PW-4

**Group #:** WSCF20031154

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF		DF	MDL	Analyze Sample Receive
					Method	RQ			
W030000723	B173V7	GPP	TRENT	E,T,C	Bi-214 Rel. Count Error (GEA)	SOIL	LA-508-462	+- 0.126	pCi/g 0.0 09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	15067-28-4	Lead-214	SOIL	LA-508-462	+- 0.858	pCi/g 0.034 09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E,T,C	Pb-214 Rel. Count Error (GEA)	SOIL	LA-508-462	+- 0.123	pCi/g 0.0 09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	14331-83-0	Actinium-228	SOIL	LA-508-462	0.990	pCi/g 0.054 09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E,T,C	Ac-228 Rel. Count Error (GEA)	SOIL	LA-508-462	+- 0.166	pCi/g 0.0 09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	15065-10-8	Thorium-234	SOIL	LA-508-462	1.30	pCi/g 1.2 09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E,T,C	Th-234 Rel. Count Error (GEA)	SOIL	LA-508-462	+- 0.348	pCi/g 0.0 09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	15117-96-1	Uranium-235	SOIL	LA-508-462	0.137	pCi/g 0.13 09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E,T,C	U-235 Rel. Count Error (GEA)	SOIL	LA-508-462	+- 0.0329	pCi/g 0.0 09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	14596-10-2	Americium-241	SOIL	LA-508-462	U -0.0297	pCi/g 0.14 09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E,T,C	Am-241 Rel Count Error (GEA)	SOIL	LA-508-462	+- 0.0805	pCi/g 0.0 09/25/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	7440-69-9	Bismuth	SOIL	LA-505-411	U < 5.07	mg/kg 5.1 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	7440-42-8	Boron	SOIL	LA-505-411	U < 5.07	mg/kg 5.1 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	7440-36-0	Antimony	SOIL	LA-505-412	EU < 4.92	mg/kg 4.9 09/15/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	7440-38-2	Arsenic	SOIL	LA-505-412	5.54	mg/kg 9.84 3.0 09/15/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	7440-39-3	Barium	SOIL	LA-505-412	75.8	mg/kg 9.84 2.0 09/15/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	7440-41-7	Beryllium	SOIL	LA-505-412	U < 2.95	mg/kg 9.84 3.0 09/15/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	7440-47-3	Chromium	SOIL	LA-505-412	18.5	mg/kg 9.84 3.0 09/15/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	7440-50-8	Copper	SOIL	LA-505-412	14.1	mg/kg 9.84 4.9 09/15/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	7439-92-1	Lead	SOIL	LA-505-412	U < 11.8	mg/kg 12 09/15/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	7440-02-0	Nickel	SOIL	LA-505-412	18.1	mg/kg 9.84 4.9 09/15/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	7440-22-4	Silver	SOIL	LA-505-412	U < 1.97	mg/kg 9.84 2.0 09/15/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	7440-61-1	Uranium	SOIL	LA-505-412	U < 0.984	mg/kg 9.84 0.98 09/15/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	7439-97-6	Mercury	SOIL	LA-505-412	U < 0.984	mg/kg 9.84 0.98 09/15/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	TPHGASOLINE	Total Pet. Hydrocarbons Gas	SOIL	NWTPH	U < 250	ug/kg 2.5e+02 09/03/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	12674-11-2	Aroclor-1016	SOIL	LA-523-427	U < 52.0	ug/kg 52 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U < 100	ug/kg 1.0e+02 09/09/03 08/22/03 08/25/03

**MDL=Minimum Detection Limit**

**RQ=Result Qualifier**

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

J - Estimated Value

E - Analyte is an estimate, has potentially larger errors

U - Analyzed for but not detected above limiting criteria.

**DF=Dilution Factor**

\* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

**Report WGPP/ver. 1**

**Ground Water Protection Program**

**Page 4**

# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**Project:** F03-006: 200-PW-2/PW-4

**Group #:** WSCF20031154

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF		DF	MDL	Analyze Sample Receive
					Method	RQ			
W030000723	B173V7	GPP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 52.0 ug/kg 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 52.0 ug/kg 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 52.0 ug/kg 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427	U	< 52.0 ug/kg 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427	U	< 52.0 ug/kg 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 52.0 ug/kg 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	11100-14-4	Aroclor-1268	SOIL	LA-523-427	U	< 52.0 ug/kg 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	13981-16-3	Plutonium-238	SOIL	LA-508-471		0.0500 pCi/g 0.048 09/02/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E,T,C	Pu-238 by AEA Total Cntg Error	SOIL	LA-508-471	+-	0.0350 pCi/g 0.0 09/02/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	PU-239/240	Pu-239/240 by AEA	SOIL	LA-508-471	U	0.0110 pCi/g 0.016 09/02/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E,T,C	Pu-239/240 AEA Total Cntg Err	SOIL	LA-508-471	+-	0.0121 pCi/g 0.0 09/02/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	< 690 ug/kg 6.9e+02 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 330 ug/kg 3.3e+02 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	< 110 ug/kg 1.1e+02 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 310 ug/kg 3.1e+02 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 71.0 ug/kg 71 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	< 71.0 ug/kg 71 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 71.0 ug/kg 71 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 71.0 ug/kg 71 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 71.0 ug/kg 71 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 320 ug/kg 3.2e+02 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 160 ug/kg 1.6e+02 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	100-01-6	4-Nitroaniline	SOIL	LA-523-456	U	< 260 ug/kg 2.6e+02 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	101-55-3	4-Bromophenylphenyl ether	SOIL	LA-523-456	U	< 71.0 ug/kg 71 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	105-67-9	2,4-Dimethylphenol	SOIL	LA-523-456	U	< 71.0 ug/kg 71 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	106-47-8	4-Chloroaniline	SOIL	LA-523-456	U	< 100 ug/kg 1.0e+02 09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	108-60-1	Bis(2-chloro-1-methylethyl)eth	SOIL	LA-523-456	U	< 270 ug/kg 2.7e+02 09/09/03 08/22/03 08/25/03

**MDL=Minimum Detection Limit**

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

E - Analyte is an estimate, has potentially larger errors

**RQ=Result Qualifier**

J - Estimated Value

U - Analyzed for but not detected above limiting criteria.

**DF=Dilution Factor**

-- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

**Report WGPP/ver. 1**

**Ground Water Protection Program**

**Page 5**

# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:**  
**Project:**

Steve Trent  
F03-006: 200-PW-2/PW-4

**Group #:** WSCF20031154

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze Sample Receive		
W030000723	B173V7	GPP	TRENT	111-44-4	Bis(2-chloroethyl) ether	SOIL	LA-523-456	U	< 260	ug/kg	1.00	2.6e +02	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	111-91-1	Bis(2-Chloroethoxy)methane	SOIL	LA-523-456	U	< 120	ug/kg	1.00	1.2e +02	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	117-81-7	Bis(2-ethylhexyl) phthalate	SOIL	LA-523-456	U	< 600	ug/kg	1.00	6.0e +02	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	117-84-0	Di-n-octylphthalate	SOIL	LA-523-456	U	< 71.0	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	118-74-1	Hexachlorobenzene	SOIL	LA-523-456	U	< 71.0	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	120-12-7	Anthracene	SOIL	LA-523-456	U	< 71.0	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	120-83-2	2,4-Dichlorophenol	SOIL	LA-523-456	U	< 85.0	ug/kg	1.00	85	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	131-11-3	Dimethyl phthalate	SOIL	LA-523-456	U	< 71.0	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	132-64-9	Dibenzofuran	SOIL	LA-523-456	U	< 71.0	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	191-24-2	Benzo(ghi)perylene	SOIL	LA-523-456	U	< 71.0	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	193-39-5	Indeno(1,2,3-cd)pyrene	SOIL	LA-523-456	U	< 71.0	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	205-99-2	Benzo(b)fluoranthene	SOIL	LA-523-456	U	< 71.0	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	206-44-0	Fluoranthene	SOIL	LA-523-456	U	< 71.0	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	207-08-9	Benzo(k)fluoranthene	SOIL	LA-523-456	U	< 71.0	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	208-96-8	Acenaphthylene	SOIL	LA-523-456	U	< 85.0	ug/kg	1.00	85	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	218-01-9	Chrysene	SOIL	LA-523-456	U	< 71.0	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	50-32-8	Benzo(a)pyrene	SOIL	LA-523-456	U	< 71.0	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	51-28-5	2,4-Dinitrophenol	SOIL	LA-523-456	U	< 710	ug/kg	1.00	7.1e +02	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	53-70-3	Dibenz(a,h)anthracene	SOIL	LA-523-456	U	< 71.0	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	534-52-1	4,6-Dinitro-2-methylphenol	SOIL	LA-523-456	U	< 710	ug/kg	1.00	7.1e +02	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	541-73-1	1,3-Dichlorobenzene	SOIL	LA-523-456	U	< 340	ug/kg	1.00	3.4e +02	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	56-55-3	Benzo(a)anthracene	SOIL	LA-523-456	U	< 71.0	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	606-20-2	2,6-Dinitrotoluene	SOIL	LA-523-456	U	< 71.0	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	7005-72-3	4-Chlorophenylphenyl ether	SOIL	LA-523-456	U	< 71.0	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	77-47-4	Hexachlorocyclopentadiene	SOIL	LA-523-456	U	< 330	ug/kg	1.00	3.3e +02	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	78-59-1	Isophorone	SOIL	LA-523-456	J	180	ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	84-66-2	Diethylphthalate	SOIL	LA-523-456	J	650	ug/kg	1.00	2.0e +02	09/09/03 08/22/03 08/25/03

**MDL=Minimum Detection Limit**

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

E - Analyte is an estimate, has potentially larger errors

**RQ=Result Qualifier**

J - Estimated Value

U - Analyzed for but not detected above limiting criteria.

**DF=Dilution Factor**

-- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

*Report WGPP/ver. 1*

*Ground Water Protection Program*

*Page 6*

**WSCF**  
**ANALYTICAL RESULTS REPORT**

7  
12

**Attention:  
Project:**

Steve Trent  
F03-006: 200-PW-2/PW-4

**Group #:** WSCF20031154

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze Sample Receive
W030000723	B173V7	GPP	TRENT	84-74-2	Di-n-butylphthalate	SOIL LA-523-456	U <	93.0 ug/kg	1.00	93	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	85-01-8	Phenanthrene	SOIL LA-523-456	U <	71.0 ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	85-68-7	Butylbenzylphthalate	SOIL LA-523-456	U <	71.0 ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	86-30-6	N-Nitrosodiphenylamine	SOIL LA-523-456	U <	71.0 ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	86-73-7	Fluorene	SOIL LA-523-456	U <	71.0 ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	86-74-8	Carbazole	SOIL LA-523-456	U <	85.0 ug/kg	1.00	85	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	87-68-3	Hexachlorobutadiene	SOIL LA-523-456	U <	390 ug/kg	1.00	3.9e+02	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	88-74-4	2-Nitroaniline	SOIL LA-523-456	U <	71.0 ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	88-75-5	2-Nitrophenol	SOIL LA-523-456	U <	190 ug/kg	1.00	1.9e+02	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	91-20-3	Naphthalene	SOIL LA-523-456	U <	310 ug/kg	1.00	3.1e+02	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	91-57-6	2-Methylnaphthalene	SOIL LA-523-456	U <	190 ug/kg	1.00	1.9e+02	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	91-58-7	2-Chloronaphthalene	SOIL LA-523-456	U <	71.0 ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	91-94-1	3,3'-Dichlorobenzidine	SOIL LA-523-456	U <	85.0 ug/kg	1.00	85	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	95-48-7	2-Methylphenol (cresol, o-)	SOIL LA-523-456	U <	71.0 ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	95-50-1	1,2-Dichlorobenzene	SOIL LA-523-456	U <	380 ug/kg	1.00	3.8e+02	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	95-95-4	2,4,5-Trichlorophenol	SOIL LA-523-456	U <	78.0 ug/kg	1.00	78	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	98-95-3	Nitrobenzene	SOIL LA-523-456	U <	280 ug/kg	1.00	2.8e+02	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	99-09-2	3-Nitroaniline	SOIL LA-523-456	U <	71.0 ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	65794-96-9	3 & 4 Methylphenol Total	SOIL LA-523-456	U <	120 ug/kg	1.00	1.2e+02	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	67-72-1	Hexachloroethane	SOIL LA-523-456	U <	500 ug/kg	1.00	5.0e+02	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	88-06-2	2,4,6-Trichlorophenol	SOIL LA-523-456	U <	71.0 ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	111-76-2	2-Butoxyethanol	SOIL LA-523-456	U <	110 ug/kg	1.00	1.1e+02	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	126-73-8	Tributyl phosphate	SOIL LA-523-456	U <	71.0 ug/kg	1.00	71	09/09/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	U-233/234	Uranium-233/234	SOIL LA-508-471		0.260 pCi/g	1.00	0.014	08/27/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	U-233/234 AEA Total Cntg Error	SOIL LA-508-471	+-	0.0806 pCi/g	1.00	0.0	08/27/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	15117-96-1	Uranium-235	SOIL LA-508-471	U	0.0190 pCi/g	1.00	0.019	08/27/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	U-235 by AEA Total Cntg Error	SOIL LA-508-471	+-	0.0160 pCi/g	1.00	0.0	08/27/03 08/22/03 08/25/03

**MDL=Minimum Detection Limit**

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

E - Analyte is an estimate, has potentially larger errors

**RQ=Result Qualifier**

J - Estimated Value

U - Analyzed for but not detected above limiting criteria.

**DF=Dilution Factor**

- Indicates results that have NOT been validated: + - Indicates more than six qualifier symbols

**Report WGPP/ver. 1**

**Ground Water Protection Program**

# WSCF

## ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**Project:** F03-006: 200-PW-2/PW-4

**Group #:** WSCF20031154

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze Sample Receive
W030000723	B173V7	GPP	TRENT	U-238	SOIL	LA-508-471	0.280	pCi/g	1.00	0.014	08/27/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	E.T.C	SOIL	LA-508-471	+ - 0.0840	pCi/g	1.00	0.10	08/27/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	TPHDIESEL	SOIL	NWTPH	< 4.70e +03	ug/kg	1.00	4.7e +03	09/08/03 08/22/03 08/25/03
W030000723	B173V7	GPP	TRENT	KEROSENE	SOIL	NWTPH	< 4.70e +03	ug/kg	1.00	4.7e +03	09/08/03 08/22/03 08/25/03

**MDL=Minimum Detection Limit**

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

E - Analyte is an estimate, has potentially larger errors

**RQ=Result Qualifier**

J - Estimated Value

U - Analyzed for but not detected above limiting criteria.

**DF=Dilution Factor**

- - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

*Report WGPP/ver. 1*

*Ground Water Protection Program*

# WSCF

## ANALYTICAL COMMENT REPORT

**Attention:** Steve Trent  
**Project Number** F03-006

**Group #:** WSCF20031154

Sample #	Client ID	Lab Area	Test	Comment
W030000723	B173V7	GPP	TRENT	VALGROUP
			VALTEST	Anions by Ion Chromatography

ICP-AES: Low Bismuth recovery in LCS. No qualifiers given as all other QC was within limits. Idl

TPHD: Matrix spike recovery at 74% slightly below the lower control limit of 75%. All other results acceptable.

TPHD/SVOC/PCB: All results moisture corrected and reported on a dry weight basis. cgc

ICP-MS: High silver LCS recovery but no flags issued because they are within manufacturers specifications.

Estimated antimony result due to low CCV recovery.

SVOA: The extracts had to be dried twice in order to remove all the water. For target compounds which are below the lowest calibration standard but above the detection limit a J-flag is added. den

Ammonium-N: Ammonium-N detected at a concentration less than that of the lowest calibration level, but greater than that of the MDL.

Anions: Chloride and sulfate detected, but at concentrations greater than the MDL, but less than that of the lowest calibration standard. These analytes were flagged with a "B" qualifier. Duplicate RPD requirement does not apply.wb

Sample W030000723 for PU/AM test had method blanks that were flagged because of negative results. The RPD failed but the sample is below detection so RPD criterion does not apply.

Anions: The chloride result for W030000723 was less than

**Lab Areas:** VALGROUP - Group Validation  
LOGSAMP - Login for Sample

VALTEST - Test Validation  
LOGTEST - Login for Tests

TESTDATA - Test Data Entry

This report may not be reproduced, except in its entirety without the written approval of the WSCF Laboratory.

# WSCF

## ANALYTICAL COMMENT REPORT

**Attention:** Steve Trent  
**Project Number** F03-006

**Group #:** WSCF20031154

Sample #	Client ID	Lab Area	Test	Comment
		VALTEST	pH Soil and Waste Measurement	10X the MDL, so the +/- 20% relative percent difference requirement does not apply. pH: tested 10 gram sample (procedure requires 20 grams) wb

**Lab Areas:** VALGROUP - Group Validation  
LOGSAMP - Login for Sample

VALTEST - Test Validation  
LOGTEST - Login for Tests

TESTDATA - Test Data Entry

This report may not be reproduced, except in its entirety without the written approval of the WSCF Laboratory.

**WSCF**  
**TENTATIVELY IDENTIFIED PEAK REPORT**

**Attention:**  
**Project Number**

Steve Trent  
F03-006 :200-PW-2/PW-4

**Group #:** WSCF20031154

Sample #	Client ID			Test Name	Peak Name	CAS#	RT	RQ	Result	Units
W030000723	B173V7	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40 Count Error				13	%
W030000723	B173V7	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40				18	pCi/g
W030000723	B173V7	GPP	TRENT	SW-846 8270B Semi-Vols	SMP 13.297 Benzenesulfonamide, N-	3622-84-2	13.29786	J	1.1e +03	ug/kg
W030000723	B173V7	GPP	TRENT	SW-846 8270B Semi-Vols	SMP 4.623 Unknown	Unknown	4.62395	J	2.0e +04	ug/kg
W030000723	B173V7	GPP	TRENT	SW-846 8270B Semi-Vols	SMP 4.266 3-Penten-2-one, 4-meth	141-79-7	4.266383	J	2.3e +03	ug/kg
W030000723	B173V7	GPP	TRENT	SW-846 8270B Semi-Vols	SMP 4.460 2-Pantanone, 4-hydroxy	4161-60-8	4.4605	J	6.4e +02	ug/kg

**RQ=**Result Qualifier

J - Estimated Value

This report may not be reproduced, except in its entirety without the written approval of the WSCF Laboratory.

*Ground Water Protection Program*

WGPPE v 0 Report #: 20031154

Report Date: 30-sep-2003

Page 1

# WSCF

## METHOD REFERENCES REPORT

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory or industry methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though the WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

<b>LA-212-411</b>	Determination of Soil pH Measurement EPA SW-846 9045C	SOIL AND WASTE pH
<b>LA-503-401</b>	LA-503-401: ANALYSIS OF CATIONS BY ION CHROMATOGRAPHY EPA-600/4-86-024 300.7	Dissolved Sodium, Ammonium, Potassium, and Calcium in Wet Deposition by Chemical
<b>LA-505-411</b>	LA-505-411: ELEMENTAL ANALYSIS BY INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPE EPA SW-846 6010B	INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY
<b>LA-505-412</b>	LA-505-412: DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY EPA-600/R-94-111 200.8	DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY COUPLED PLAS
<b>LA-508-462</b>	Gamma Energy Analysis -- the Genie System -- WSCF None	No reference to any industry method.
<b>LA-508-471</b>	LA-508-471: ALPHA ENERGY ANALYZER DATA ACQUISITION AND SYSTEM CHECKOUT USING ALP None	No reference to any industry method.
<b>LA-519-412</b>	LA-519-412: TOTAL RESIDUE/% SOLIDS DRIED AT 103 - 105 C EPA-600/4-79-020 160.3 Standard Methods 2540B	RESIDUE, TOTAL Total Solids Dried at 103-105 C
<b>LA-523-427</b>	LA-523-427: POLYCHLORINATED BIPHENYLS (PCBs) BY GAS CHROMATOGRAPHY EPA SW-846 3510C EPA SW-846 3545	SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION PRESSURIZED FLUID EXTRACTION (PFE)

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at <http://apweb02/asponlinedocs/wscf/sample%20mgmt/ProcedureMethodCrossReference.pdf>. This document includes on-line links to full-text versions of the procedures and methods, where available.

Report Date: 30-sep-2003

Report #: WSCF20031154

Report WGPPM/O

# WSCF

## METHOD REFERENCES REPORT

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory or industry methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though the WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

	EPA SW-846 3665A	SULFURIC ACID/PERMANGANATE CLEANUP
	EPA SW-846 8000B	DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS
	EPA SW-846 8082	POLYCHLORINATED BIPHENYLS (PCBs) BY GAS CHROMATOGRAPHY
LA-523-456	LA-523-456: SEMIVOLATILE SAMPLE ANALYSIS BY SW-846, METHOD 8270C	
	EPA SW-846 8000B	DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS
	EPA SW-846 8270C	SEMIVOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)
LA-533-410	LA-533-410: ANION ANALYSIS BY ION CHROMATOGRAPHY	
	EPA-600/R-94-111 300	DETERMINATION OF INORGANIC ANIONS BY ION CHROMATOGRAPHY
LA-695-402	LA-695-402: DETERMINATION OF CYANIDE BY MIDIDISTILLATION AND SPECTROPHOTOMETRIC	
	EPA-600/4-79-020 335.2	Cyanide, Total
NWTPH	NWTPH-Diesel and/or Gasoline	
	WDOE NWTPH-Dx/Gx	Total Petroleum Hydrocarbons - Diesel/Gasoline
Organics	Organics - Alcohols, Glycols	
	EPA SW-846 8015B	Nonhalogenated Organics Using GC/FID

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at  
<http://apweb02/asponlinedocs/wscf/sample%20mgmt/ProcedureMethodCrossReference.pdf>. This document includes on-line links to full-text versions of the procedures and methods, where available.

Report Date: 30-sep-2003

Report#: WSCF20031154

Report WGPPM/0

## W13q Worklist/Batch/QC Report for Group# WSCF20031154

WL#	S#	Batch	QC#	Tray	Type	Sample#	Test
				SAMPLE		W030000723	Percent Solids
				SAMPLE		W030000723	pH Soil and Waste Measurement
20186	1	20569	23407	BLANK			Uranium Isotopes by AEA
20186	2	20569	23407	LCS			Uranium Isotopes by AEA
20186	3	20569	23407	DUP		W030000723	Uranium Isotopes by AEA
20186	4	20569	23407	SAMPLE		W030000723	Uranium Isotopes by AEA
				23425	BLANK		Cyanide by Midi/Spectrophotom
				23425	BLNK-PREP		Cyanide by Midi/Spectrophotom
				23425	LCS		Cyanide by Midi/Spectrophotom
				23425	LCS-2		Cyanide by Midi/Spectrophotom
				23425	DUP	W030000723	Cyanide by Midi/Spectrophotom
				23425	MS	W030000723	Cyanide by Midi/Spectrophotom
				23425	MSD	W030000723	Cyanide by Midi/Spectrophotom
				23425	SAMPLE	W030000723	Cyanide by Midi/Spectrophotom
				23425	SPK-RPD	W030000723	Cyanide by Midi/Spectrophotom
20204	1	20588	23444	BLANK			Plutonium Isotopes by AEA
20204	2	20588	23444	LCS			Plutonium Isotopes by AEA
20204	3	20588	23444	DUP		W030000723	Plutonium Isotopes by AEA
20204	4	20588	23444	SAMPLE		W030000723	Plutonium Isotopes by AEA
20205	1	20587	23445	BLANK			Americium by AEA
20205	2	20587	23445	LCS			Americium by AEA
20205	3	20587	23445	DUP		W030000723	Americium by AEA
20205	4	20587	23445	SAMPLE		W030000723	Americium by AEA
20308	1	20688	23515	BLANK			ICP Metals Analysis, Grd H2O P
20308	2	20688	23515	LCS			ICP Metals Analysis, Grd H2O P
20308	7	20688	23515	MS		W030000701	ICP Metals Analysis, Grd H2O P
20308	8	20688	23515	MSD		W030000701	ICP Metals Analysis, Grd H2O P
20308	4	20688	23515	MS		W030000709	ICP Metals Analysis, Grd H2O P
20308	5	20688	23515	MSD		W030000709	ICP Metals Analysis, Grd H2O P
20308	12	20688	23515	MS		W030000723	ICP Metals Analysis, Grd H2O P
20308	13	20688	23515	MSD		W030000723	ICP Metals Analysis, Grd H2O P
20308	11	20688	23515	SAMPLE		W030000723	ICP Metals Analysis, Grd H2O P
20308	0	20688	23515	SPK-RPD		W030000723	ICP Metals Analysis, Grd H2O P
				23527	BLANK		SW-846 8270B Semi-Vols
				23527	LCS		SW-846 8270B Semi-Vols
				23527	SAMPLE	W030000723	SW-846 8270B Semi-Vols
				23527	SURR	W030000723	SW-846 8270B Semi-Vols
				23527	MS	W030000789	SW-846 8270B Semi-Vols
				23527	MSD	W030000789	SW-846 8270B Semi-Vols
				23527	SPK-RPD	W030000789	SW-846 8270B Semi-Vols
				23529	BLANK		PCBs complete list
				23529	LCS		PCBs complete list
				23529	SAMPLE	W030000723	PCBs complete list
				23529	SURR	W030000723	PCBs complete list
				23529	MS	W030000789	PCBs complete list
				23529	MSD	W030000789	PCBs complete list
				23529	SPK-RPD	W030000789	PCBs complete list

			23536	BLANK		WTPH-D TPH Diesel Range (Wa)
			23536	LCS		WTPH-D TPH Diesel Range (Wa)
			23536	SAMPLE	W030000723	WTPH-D TPH Diesel Range (Wa)
			23536	SURR	W030000723	WTPH-D TPH Diesel Range (Wa)
			23536	MS	W030000789	WTPH-D TPH Diesel Range (Wa)
			23536	MSD	W030000789	WTPH-D TPH Diesel Range (Wa)
			23536	SPK-RPD	W030000789	WTPH-D TPH Diesel Range (Wa)
20349	1	20730	23538	BLANK		ICP-2008 MS All possible metal
20349	2	20730	23538	LCS		ICP-2008 MS All possible metal
20349	4	20730	23538	MS	W030000715	ICP-2008 MS All possible metal
20349	5	20730	23538	MSD	W030000715	ICP-2008 MS All possible metal
20349	12	20730	23538	MS	W030000723	ICP-2008 MS All possible metal
20349	13	20730	23538	MSD	W030000723	ICP-2008 MS All possible metal
20349	11	20730	23538	SAMPLE	W030000723	ICP-2008 MS All possible metal
20349	15	20730	23538	MS	W030000727	ICP-2008 MS All possible metal
20349	16	20730	23538	MSD	W030000727	ICP-2008 MS All possible metal
20406	3	20787	23613	BLNK-PREP		Ammonia (N) by IC
20406	8	20787	23613	BLNK-PREP		Ammonia (N) by IC
20406	1	20787	23613	LCS		Ammonia (N) by IC
20406	5	20787	23613	DUP	W030000723	Ammonia (N) by IC
20406	6	20787	23613	MS	W030000723	Ammonia (N) by IC
20406	7	20787	23613	MSD	W030000723	Ammonia (N) by IC
20406	4	20787	23613	SAMPLE	W030000723	Ammonia (N) by IC
20412	2	20793	23617	BLANK		Anions by Ion Chromatography
20412	9	20793	23617	BLANK		Anions by Ion Chromatography
20412	3	20793	23617	LCS		Anions by Ion Chromatography
20412	5	20793	23617	DUP	W030000723	Anions by Ion Chromatography
20412	6	20793	23617	MS	W030000723	Anions by Ion Chromatography
20412	7	20793	23617	MSD	W030000723	Anions by Ion Chromatography
20412	4	20793	23617	SAMPLE	W030000723	Anions by Ion Chromatography
20427	1	20809	23635	BLANK		Alcohols, Glycols - 8015
20427	2	20809	23635	LCS		Alcohols, Glycols - 8015
20427	4	20809	23635	MS	W030000723	Alcohols, Glycols - 8015
20427	5	20809	23635	MSD	W030000723	Alcohols, Glycols - 8015
20427	3	20809	23635	SAMPLE	W030000723	Alcohols, Glycols - 8015
20427	5	20809	23635	SPK-RPD	W030000723	Alcohols, Glycols - 8015
20428	1	20810	23637	BLANK		NWTPH-GX TPH Gasoline Range
20428	2	20810	23637	LCS		NWTPH-GX TPH Gasoline Range
20428	4	20810	23637	DUP	W030000723	NWTPH-GX TPH Gasoline Range
20428	5	20810	23637	MS	W030000723	NWTPH-GX TPH Gasoline Range
20428	6	20810	23637	MSD	W030000723	NWTPH-GX TPH Gasoline Range
20428	3	20810	23637	SAMPLE	W030000723	NWTPH-GX TPH Gasoline Range
20428	6	20810	23637	SPK-RPD	W030000723	NWTPH-GX TPH Gasoline Range
20160	1	20543	23731	BLANK		Gamma Energy Analysis-grd H20
20160	2	20543	23731	LCS		Gamma Energy Analysis-grd H20
20160	3	20543	23731	DUP	W030000723	Gamma Energy Analysis-grd H20
20160	4	20543	23731	SAMPLE	W030000723	Gamma Energy Analysis-grd H20

# WSCF ANALYTICAL LABORATORY QC REPORT

2 - 16

SDG Number: WSCF20031154  
 Matrix: SOLID  
 Test: Uranium Isotopes by AEA

SAF Number: F03-006  
 Sample Date: 08/22/03  
 Receive Date: 08/25/03

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
---------	---------	-------	----------	----------	-------	---------------	-------------	-------------	----

Lab ID: W030000723

## BATCH QC ASSOCIATED WITH SAMPLE

DUP	Uranium-238	U-238	3.1e-01	10.169	RPD	08/27/03	0.000	20.000	
-----	-------------	-------	---------	--------	-----	----------	-------	--------	--

## BATCH QC

BLANK	Uranium-238	24678-82-8	5.7e-03	0.006	PCG	08/27/03	0.000	1000.000	
LCS	Uranium-238	24678-82-8	37.74	99.552	% Recov	08/27/03	75.000	125.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

2 - 17

SDG Number: WSCF20031154

Matrix: SOLID

Test: Cyanide by Midi/Spectrophotom

SAF Number: F03-006

Sample Date: 08/22/03

Receive Date: 08/25/03

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
---------	---------	-------	----------	----------	-------	---------------	-------------	-------------	----

Lab ID: W030000723

## BATCH QC ASSOCIATED WITH SAMPLE

DUP	Cyanide by Midi/Spectrophotom	57-12-5	<0.2	n/a	RPD	09/03/03	0.000	20.000	U
MS	Cyanide by Midi/Spectrophotom	57-12-5	97.5	97.500	% Recov	09/03/03	75.000	125.000	
MSD	Cyanide by Midi/Spectrophotom	57-12-5	101.8	101.800	% Recov	09/03/03	75.000	125.000	
SPK-RPD	Cyanide by Midi/Spectrophotom	57-12-5	101.800	4.315	RPD	09/03/03	0.000	20.000	

## BATCH QC

BLANK	Cyanide by Midi/Spectrophotom	57-12-5	<1	n/a	ug/L	09/03/03	-4.000	4.000	U
BLNK-PREP	Cyanide by Midi/Spectrophotom	57-12-5	N/A	n/a	ug/L	09/03/03	-4.000	4.000	
LCS	Cyanide by Midi/Spectrophotom	57-12-5	96.89	96.890	% Recov	09/03/03	85.000	115.000	
LCS-2	Cyanide by Midi/Spectrophotom	57-12-5	N/A	n/a	% Recov	09/03/03	85.000	115.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

2 - 18

SDG Number: WSCF20031154  
 Matrix: SOLID  
 Test: Plutonium Isotopes by AEA

SAF Number: F03-006  
 Sample Date: 08/22/03  
 Receive Date: 08/25/03

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
---------	---------	-------	----------	----------	-------	---------------	-------------	-------------	----

Lab ID: W030000723

## BATCH QC ASSOCIATED WITH SAMPLE

DUP	Pu-239/240 by AEA	PU-239/240	2.0e-03	138.462	RPD	09/02/03	0.000	20.000	
-----	-------------------	------------	---------	---------	-----	----------	-------	--------	--

## BATCH QC

BLANK	Pu-239/240 by AEA	PU-239/240	-9.0e-03	-0.009	PCG	09/02/03	0.000	1000.000	
LCS	Pu-239/240 by AEA	PU-239/240	11.6	94.309	% Recov	09/02/03	75.000	125.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

2 - 19

SDG Number: WSCF20031154  
 Matrix: SOLID  
 Test: Americium by AEA

SAF Number: F03-006  
 Sample Date: 08/22/03  
 Receive Date: 08/25/03

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
---------	---------	-------	----------	----------	-------	---------------	-------------	-------------	----

Lab ID: W030000723

## BATCH QC ASSOCIATED WITH SAMPLE

DUP	Americium-241	14596-10-2	-1.8e-02	302.857	RPD	09/02/03	0.000	20.000	*
-----	---------------	------------	----------	---------	-----	----------	-------	--------	---

## BATCH QC

BLANK	Americium-241	14596-10-2	-8.2e-03	-0.008	PCG	09/02/03	0.000	1000.000	*
LCS	Americium-241	14596-10-2	1.3e +01	98.859	% Recov	09/03/03	75.000	125.000	*

# WSCF ANALYTICAL LABORATORY QC REPORT

2 - 20

SDG Number: WSCF20031154

Matrix: SOLID

Test: ICP Metals Analysis, Grd H2O P

SAF Number: F03-006

Sample Date: 08/13/03

Receive Date: 08/13/03

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
---------	---------	-------	----------	----------	-------	---------------	-------------	-------------	----

Lab ID: W030000701

BATCH QC ASSOCIATED WITH SAMPLE

MS	Boron	7440-42-8	244.75	98.690	% Recov	09/09/03	75.000	125.000	
MS	Bismuth	7440-69-9	229	92.339	% Recov	09/09/03	75.000	125.000	
MSD	Boron	7440-42-8	244650	98.649	% Recov	09/09/03	75.000	125.000	
MSD	Bismuth	7440-69-9	229300	92.460	% Recov	09/09/03	75.000	125.000	

Lab ID: W030000709

BATCH QC ASSOCIATED WITH SAMPLE

MS	Boron	7440-42-8	268	107.631	% Recov	09/09/03	75.000	125.000	
MS	Bismuth	7440-69-9	252	101.205	% Recov	09/09/03	75.000	125.000	
MSD	Boron	7440-42-8	268	107.631	% Recov	09/09/03	75.000	125.000	
MSD	Bismuth	7440-69-9	253	101.606	% Recov	09/09/03	75.000	125.000	

Lab ID: W030000723

BATCH QC ASSOCIATED WITH SAMPLE

MS	Boron	7440-42-8	266	106.827	% Recov	09/09/03	75.000	125.000	
MS	Bismuth	7440-69-9	252	101.205	% Recov	09/09/03	75.000	125.000	
MSD	Boron	7440-42-8	270	108.434	% Recov	09/09/03	75.000	125.000	
MSD	Bismuth	7440-69-9	253	101.606	% Recov	09/09/03	75.000	125.000	
SPK-RPD	Boron	7440-42-8	108.434	1.493	RPD	09/09/03	0.000	20.000	
SPK-RPD	Bismuth	7440-69-9	101.606	0.395	RPD	09/09/03	0.000	20.000	

BATCH QC

BLANK	Boron	7440-42-8	6.6	0.065	ug/L	09/09/03	-10.000	10.000	
BLANK	Bismuth	7440-69-9	<0.1	n/a	ug/L	09/09/03	-1.000	0.068	U
LCS	Boron	7440-42-8	59.4	92.523	% Recov	09/09/03	80.000	120.000	
LCS	Bismuth	7440-69-9	301	60.442	% Recov	09/09/03	80.000	120.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

2 - 21

SDG Number: WSCF20031154

Matrix: SOLID

Test: ICP Metals Analysis, Grd H20 P

SAF Number: F03-006

Sample Date:

Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
---------	---------	-------	----------	----------	-------	---------------	-------------	-------------	----

# WSCF ANALYTICAL LABORATORY QC REPORT

2 - 22

SDG Number: WSCF20031154  
 Matrix: SOLID  
 Test: SW-846 8270B Semi-Vols

SAF Number: F03-006  
 Sample Date: 08/22/03  
 Receive Date: 08/25/03

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
---------	---------	-------	----------	----------	-------	---------------	-------------	-------------	----

Lab ID: W030000723  
 BATCH QC ASSOCIATED WITH SAMPLE

SURR	2-Fluorophenol	367-12-4	2704.3	81.500	%Recove	09/09/03	42.000	105.000	
SURR	2-Fluorobiphenyl	321-60-8	3063.9	92.300	%Recove	09/09/03	56.000	122.000	
SURR	Nitrobenzene-d5	4165-60-0	2793.6	84.200	%Recove	09/09/03	64.000	111.000	
SURR	Phenol-d5	4165-62-2	2729.9	82.300	%Recove	09/09/03	54.000	120.000	
SURR	2,4,6-Tribromophenol	118-79-6	2603.9	78.500	%Recove	09/09/03	24.000	122.000	
SURR	Terphenyl-d14 (7Cl)	98904-43-9	3131.6	94.400	%Recove	09/09/03	35.000	150.000	

Lab ID: W030000789  
 BATCH QC ASSOCIATED WITH SAMPLE

MS	1,2,4-Trichlorobenzene	120-82-1	3002.4	90.500	% Recov	09/09/03	46.000	107.000	
MS	1,4-Dichlorobenzene	106-46-7	2979.5	89.800	% Recov	09/09/03	30.000	96.000	
MS	2,4-Dinitrotoluene	121-14-2	2812.3	84.700	% Recov	09/09/03	59.000	106.000	
MS	2-Fluorophenol	367-12-4	2844.1	85.700	%Recove	09/09/03	42.000	105.000	
MS	Acenaphthene	83-32-9	3306.9	99.700	% Recov	09/09/03	61.000	116.000	
MS	4-Chloro-3-methylphenol	59-50-7	4775.0	95.900	% Recov	09/09/03	61.000	106.000	
MS	2-Chlorophenol	95-57-8	4420.8	88.800	% Recov	09/09/03	66.000	106.000	
MS	N-Nitrosodi-n-dipropylamine	621-64-7	3300.9	99.500	% Recov	09/09/03	71.000	114.000	
MS	2-Fluorobiphenyl	321-60-8	3476.4	105.000	%Recove	09/09/03	56.000	122.000	
MS	Phenol	108-95-2	4674.7	93.900	% Recov	09/09/03	42.000	111.000	
MS	Nitrobenzene-d5	4165-60-0	2893.5	87.200	%Recove	09/09/03	64.000	111.000	
MS	4-Nitrophenol	100-02-7	4390.9	88.200	% Recov	09/09/03	32.000	118.000	
MS	Pentachlorophenol	87-86-5	4150.7	83.400	% Recov	09/09/03	62.000	114.000	
MS	Phenol-d5	4165-62-2	2861.4	86.200	%Recove	09/09/03	54.000	120.000	
MS	Pyrene	129-00-0	3153.3	95.000	% Recov	09/09/03	66.000	118.000	
MS	2,4,6-Tribromophenol	118-79-6	3076.8	92.700	%Recove	09/09/03	24.000	122.000	
MS	Terphenyl-d14 (7Cl)	98904-43-9	3169.2	95.500	%Recove	09/09/03	35.000	150.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20031154  
 Matrix: SOLID  
 Test: SW-846 8270B Semi-Vols

SAF Number: F03-006  
 Sample Date: 09/03/03  
 Receive Date: 09/03/03

2 - 23

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	1,2,4-Trichlorobenzene	120-82-1	3104.0	93.600	% Recov	09/09/03	46.000	107.000	
MSD	1,4-Dichlorobenzene	106-46-7	3089.7	93.200	% Recov	09/09/03	30.000	96.000	
MSD	2,4-Dinitrotoluene	121-14-2	2753.6	83.100	% Recov	09/09/03	59.000	106.000	
MSD	2-Fluorophenol	367-12-4	2809.2	84.700	% Recov	09/09/03	42.000	105.000	
MSD	Acenaphthene	83-32-9	3077.4	92.800	% Recov	09/09/03	61.000	116.000	
MSD	4-Chloro-3-methylphenol	59-50-7	4834.8	97.200	% Recov	09/09/03	61.000	106.000	
MSD	2-Chlorophenol	95-57-8	4371.6	87.900	% Recov	09/09/03	66.000	106.000	
MSD	N-Nitrosodi-n-dipropylamine	621-64-7	3207.7	96.800	% Recov	09/09/03	71.000	114.000	
MSD	2-Fluorobiphenyl	321-60-8	3181.4	96.000	% Recov	09/09/03	56.000	122.000	
MSD	Phenol	108-95-2	4518.8	90.900	% Recov	09/09/03	42.000	111.000	
MSD	Nitrobenzene-d5	4165-60-0	2883.9	87.000	% Recov	09/09/03	64.000	111.000	
MSD	4-Nitrophenol	100-02-7	3890.8	78.200	% Recov	09/09/03	32.000	118.000	
MSD	Pentachlorophenol	87-86-5	4146.5	83.400	% Recov	09/09/03	62.000	114.000	
MSD	Phenol-d5	4165-62-2	2825.0	85.200	% Recov	09/09/03	54.000	120.000	
MSD	Pyrene	129-00-0	3106.2	93.700	% Recov	09/09/03	66.000	118.000	
MSD	2,4,6-Tribromophenol	118-79-6	2891.3	87.200	% Recov	09/09/03	24.000	122.000	
MSD	Terphenyl-d14 (7Cl)	98904-43-9	3107.4	93.700	% Recov	09/09/03	35.000	150.000	
SPK-RPD	1,2,4-Trichlorobenzene	120-82-1	93.600	3.368	RPD	09/09/03	0.000	20.000	
SPK-RPD	1,4-Dichlorobenzene	106-46-7	93.200	3.716	RPD	09/09/03	0.000	20.000	
SPK-RPD	2,4-Dinitrotoluene	121-14-2	83.100	1.907	RPD	09/09/03	0.000	20.000	
SPK-RPD	2-Fluorophenol	367-12-4	84.700	1.174	% Recov	09/09/03	0.000	20.000	
SPK-RPD	Acenaphthene	83-32-9	92.800	7.169	RPD	09/09/03	0.000	20.000	
SPK-RPD	4-Chloro-3-methylphenol	59-50-7	97.200	1.346	RPD	09/09/03	0.000	20.000	
SPK-RPD	2-Chlorophenol	95-57-8	87.900	1.019	RPD	09/09/03	0.000	20.000	
SPK-RPD	N-Nitrosodi-n-dipropylamine	621-64-7	96.800	2.751	RPD	09/09/03	0.000	20.000	
SPK-RPD	2-Fluorobiphenyl	321-60-8	96.000	8.955	% Recov	09/09/03	0.000	20.000	
SPK-RPD	Phenol	108-95-2	90.900	3.247	RPD	09/09/03	0.000	20.000	
SPK-RPD	Nitrobenzene-d5	4165-60-0	87.000	0.230	% Recov	09/09/03	0.000	20.000	
SPK-RPD	4-Nitrophenol	100-02-7	78.200	12.019	RPD	09/09/03	0.000	20.000	
SPK-RPD	Pentachlorophenol	87-86-5	83.400	0.000	RPD	09/09/03	0.000	20.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

2 - 24

SDG Number: WSCF20031154  
 Matrix: SOLID  
 Test: SW-846 8270B Semi-Vols

SAF Number: F03-006  
 Sample Date: 09/03/03  
 Receive Date: 09/03/03

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SPK-RPD	Phenol-d5	4165-62-2	85.200	1.167	%Recover	09/09/03	0.000	20.000	
SPK-RPD	Pyrene	129-00-0	93.700	1.378	RPD	09/09/03	0.000	20.000	
SPK-RPD	2,4,6-Tribromophenol	118-79-6	87.200	6.115	%Recover	09/09/03	0.000	20.000	
SPK-RPD	Terphenyl-d14 (7Cl)	98904-43-9	93.700	1.903	%Recover	09/09/03	0.000	20.000	

## BATCH QC

BLANK	1,2-Dichlorobenzene	95-50-1	< 360	n/a	ug/Kg	09/09/03			U
BLANK	1,2,4-Trichlorobenzene	120-82-1	< 290	n/a	ug/Kg	09/09/03			U
BLANK	1,3-Dichlorobenzene	541-73-1	< 320	n/a	ug/Kg	09/09/03			U
BLANK	1,4-Dichlorobenzene	106-46-7	< 310	n/a	ug/Kg	09/09/03			U
BLANK	2,4-Dichlorophenol	120-83-2	< 80	n/a	ug/Kg	09/09/03			U
BLANK	2,4-Dinitrotoluene	121-14-2	< 67	n/a	ug/Kg	09/09/03			U
BLANK	2,4,5-Trichlorophenol	95-95-4	< 73	n/a	ug/Kg	09/09/03			U
BLANK	2,4,6-Trichlorophenol	88-06-2	< 67	n/a	ug/Kg	09/09/03			U
BLANK	2,4-Dimethylphenol	105-67-9	< 67	n/a	ug/Kg	09/09/03			U
BLANK	2,6-Dinitrotoluene	606-20-2	< 67	n/a	ug/Kg	09/09/03			U
BLANK	2-Butoxyethanol	111-76-2	< 100	n/a	ug/Kg	09/09/03			U
BLANK	2-Chloronaphthalene	91-58-7	< 67	n/a	ug/Kg	09/09/03			U
BLANK	2-Fluorophenol	367-12-4	2697.9	80.900	%Recover	09/09/03	42.000	105.000	
BLANK	2-Methylnaphthalene	91-57-6	< 180	n/a	ug/Kg	09/09/03			U
BLANK	2-Methylphenol (cresol, o-)	95-48-7	< 67	n/a	ug/Kg	09/09/03			U
BLANK	2-Nitroaniline	88-74-4	< 67	n/a	ug/Kg	09/09/03			U
BLANK	2-Nitrophenol	88-75-5	< 170	n/a	ug/Kg	09/09/03			U
BLANK	3 & 4 Methylphenol Total	65794-96-9	< 110	n/a	ug/Kg	09/09/03	0.000	300.000	U
BLANK	3-Nitroaniline	99-09-2	< 67	n/a	ug/Kg	09/09/03			U
BLANK	4,6-Dinitro-2-methylphenol	534-52-1	< 670	n/a	ug/Kg	09/09/03			U
BLANK	4-Bromophenylphenyl ether	101-55-3	< 67	n/a	ug/Kg	09/09/03			U
BLANK	4-Chlorophenylphenyl ether	7005-72-3	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Acenaphthene	83-32-9	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Acenaphthylene	208-96-8	< 80	n/a	ug/Kg	09/09/03			U

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20031154  
 Matrix: SOLID  
 Test: SW-846 8270B Semi-Vols

SAF Number: F03-006  
 Sample Date:  
 Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Anthracene	120-12-7	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Bis(2-chloroethyl) ether	111-44-4	< 250	n/a	ug/Kg	09/09/03			U
BLANK	Benzo(a)anthracene	56-55-3	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Benzo(b)fluoranthene	205-99-2	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Benzo(ghi)perylene	191-24-2	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Benzo(a)pyrene	50-32-8	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Bis(2-Chloroethoxy)methane	111-91-1	< 110	n/a	ug/Kg	09/09/03			U
BLANK	Bis(2-ethylhexyl) phthalate	117-81-7	< 560	n/a	ug/Kg	09/09/03			U
BLANK	Bis(2-chloro-1-methylethyl)eth	108-60-1	< 250	n/a	ug/Kg	09/09/03	0.000	10.000	U
BLANK	Benzo(k)fluoranthene	207-08-9	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Butylbenzylphthalate	85-68-7	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Carbazole	86-74-8	< 80	n/a	ug/Kg	09/09/03			U
BLANK	4-Chloroaniline	106-47-8	< 93	n/a	ug/Kg	09/09/03			U
BLANK	4-Chloro-3-methylphenol	59-50-7	< 67	n/a	ug/Kg	09/09/03			U
BLANK	2-Chlorophenol	95-57-8	< 150	n/a	ug/Kg	09/09/03			U
BLANK	Chrysene	218-01-9	< 67	n/a	ug/Kg	09/09/03			U
BLANK	3,3'-Dichlorobenzidine	91-94-1	< 80	n/a	ug/Kg	09/09/03			U
BLANK	Dibenz[a,h]anthracene	53-70-3	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Dibenzofuran	132-64-9	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Di-n-butylphthalate	84-74-2	< 87	n/a	ug/Kg	09/09/03			U
BLANK	Diethylphthalate	84-66-2	< 190	n/a	ug/Kg	09/09/03			U
BLANK	Dimethyl phthalate	131-11-3	< 67	n/a	ug/Kg	09/09/03			U
BLANK	2,4-Dinitrophenol	51-28-5	< 670	n/a	ug/Kg	09/09/03			U
BLANK	Di-n-octylphthalate	117-84-0	< 67	n/a	ug/Kg	09/09/03			U
BLANK	N-Nitrosodi-n-dipropylamine	621-64-7	< 67	n/a	ug/Kg	09/09/03			U
BLANK	2-Fluorobiphenyl	321-60-8	2999.7	90.000	%Recover	09/09/03	56.000	122.000	
BLANK	Fluorene	86-73-7	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Fluoranthene	206-44-0	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Hexachlorobenzene	118-74-1	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Hexachlorobutadiene	87-68-3	< 370	n/a	ug/Kg	09/09/03			U

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20031154  
 Matrix: SOLID  
 Test: SW-846 8270B Semi-Vols

SAF Number: F03-006  
 Sample Date:  
 Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Hexachlorocyclopentadiene	77-47-4	< 310	n/a	ug/Kg	09/09/03			U
BLANK	Hexachloroethane	67-72-1	< 470	n/a	ug/Kg	09/09/03			U
BLANK	Indeno(1,2,3-cd)pyrene	193-39-5	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Isophorone	78-59-1	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Phenol	108-95-2	< 100	n/a	ug/Kg	09/09/03			U
BLANK	Naphthalene	91-20-3	< 290	n/a	ug/Kg	09/09/03			U
BLANK	Nitrobenzene-d5	4165-60-0	2663.3	79.900	% Recov	09/09/03	64.000	111.000	
BLANK	Nitrobenzene	98-95-3	< 260	n/a	ug/Kg	09/09/03			U
BLANK	4-Nitrophenol	100-02-7	< 650	n/a	ug/Kg	09/09/03			U
BLANK	4-Nitroaniline	100-01-6	< 250	n/a	ug/Kg	09/09/03			U
BLANK	N-Nitrosodiphenylamine	86-30-6	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Pentachlorophenol	87-86-5	< 300	n/a	ug/Kg	09/09/03			U
BLANK	Phenanthrene	86-01-8	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Phenol-d5	4165-62-2	2686.4	80.600	% Recov	09/09/03	54.000	120.000	
BLANK	Pyrene	129-00-0	< 67	n/a	ug/Kg	09/09/03			U
BLANK	Tributyl phosphate	126-73-8	< 67	n/a	ug/Kg	09/09/03			U
BLANK	2,4,6-Tribromophenol	118-79-6	2469.0	74.100	% Recov	09/09/03	24.000	122.000	
BLANK	Terphenyl-d14 (7Cl)	98904-43-9	3019.8	90.600	% Recov	09/09/03	35.000	150.000	
LCS	1,2,4-Trichlorobenzene	120-82-1	2966.0	89.000	% Recov	09/09/03	46.000	107.000	
LCS	1,4-Dichlorobenzene	106-46-7	2778.8	83.400	% Recov	09/09/03	42.000	111.000	
LCS	2,4-Dinitrotoluene	121-14-2	2733.8	82.000	% Recov	09/09/03	59.000	106.000	
LCS	2-Fluorophenol	367-12-4	2515.7	75.500	% Recov	09/09/03	50.000	110.000	
LCS	Acenaphthene	83-32-9	2935.0	88.100	% Recov	09/09/03	61.000	116.000	
LCS	4-Chloro-3-methylphenol	59-50-7	4519.3	90.400	% Recov	09/09/03	61.000	106.000	
LCS	2-Chlorophenol	95-57-8	4374.7	87.500	% Recov	09/09/03	66.000	106.000	
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	3206.0	96.200	% Recov	09/09/03	71.000	114.000	
LCS	2-Fluorobiphenyl	321-60-8	3190.6	95.700	% Recov	09/09/03	58.000	109.000	
LCS	Phenol	108-95-2	4603.8	92.100	% Recov	09/09/03	67.000	105.000	
LCS	Nitrobenzene-d5	4165-60-0	2658.1	79.700	% Recov	09/09/03	60.000	118.000	
LCS	4-Nitrophenol	100-02-7	4391.6	87.800	% Recov	09/09/03	32.000	118.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

2 - 27

SDG Number: WSCF20031154  
 Matrix: SOLID  
 Test: SW-846 8270B Semi-Vols

SAF Number: F03-006  
 Sample Date:  
 Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	Pentachlorophenol	87-86-5	3927.9	78.600	% Recov	09/09/03	62.000	114.000	
LCS	Phenol-d5	4165-62-2	2632.0	79.000	% Recov	09/09/03	59.000	116.000	
LCS	Pyrene	129-00-0	3138.2	94.100	% Recov	09/09/03	66.000	118.000	
LCS	2,4,6-Tribromophenol	118-79-6	2660.3	79.800	% Recov	09/09/03	60.000	120.000	
LCS	Terphenyl-d14 (7Cl)	98904-43-9	3073.0	92.200	% Recov	09/09/03	60.000	120.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20031154  
 Matrix: SOLID  
 Test: PCBs complete list

SAF Number: F03-006  
 Sample Date: 08/22/03  
 Receive Date: 08/25/03

2 - 28

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
<b>Lab ID: W030000723</b>									
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>									
SURR	Decachlorobiphenyl	2051-24-3	840.62	80.600	% Recov	09/09/03	50.000	150.000	
SURR	Tetrachloro-m-xylene	877-09-8	814.02	78.000	% Recov	09/09/03	50.000	150.000	
<b>Lab ID: W030000789</b>									
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>									
MS	Aroclor-1260	11096-82-5	784.60	76.000	% Recov	09/10/03	75.000	125.000	
MS	Decachlorobiphenyl	2051-24-3	771.45	74.700	% Recov	09/10/03	50.000	150.000	
MS	Tetrachloro-m-xylene	877-09-8	774.06	74.900	% Recov	09/10/03	50.000	150.000	
MSD	Aroclor-1260	11096-82-5	769.68	76.100	% Recov	09/10/03	75.000	125.000	
MSD	Decachlorobiphenyl	2051-24-3	929.32	91.900	% Recov	09/10/03	50.000	150.000	
MSD	Tetrachloro-m-xylene	877-09-8	805.17	79.600	% Recov	09/10/03	50.000	150.000	
SPK-RPD	Aroclor-1260	11096-82-5	76.100	0.131	RPD	09/09/03	0.000	25.000	
SPK-RPD	Decachlorobiphenyl	2051-24-3	91.900	20.648	RPD	09/09/03	0.000	20.000	
SPK-RPD	Tetrachloro-m-xylene	877-09-8	79.600	6.084	RPD	09/09/03	0.000	20.000	
<b>BATCH QC</b>									
BLANK	Aroclor-1016	12674-11-2	< 50	n/a	ug/Kg	09/09/03			U
BLANK	Aroclor-1221	11104-28-2	< 100	n/a	ug/Kg	09/09/03			U
BLANK	Aroclor-1232	11141-16-5	< 50	n/a	ug/Kg	09/09/03			U
BLANK	Aroclor-1242	53469-21-9	< 50	n/a	ug/Kg	09/09/03			U
BLANK	Aroclor-1248	12672-29-6	< 50	n/a	ug/Kg	09/09/03			U
BLANK	Aroclor-1254	11097-69-1	< 50	n/a	ug/Kg	09/09/03			U
BLANK	Aroclor-1260	11096-82-5	< 50	n/a	ug/Kg	09/09/03			U
BLANK	Aroclor-1262	37324-23-5	< 50	n/a	ug/Kg	09/09/03			U
BLANK	Aroclor-1268	11100-14-4	< 50	n/a	ug/Kg	09/09/03			U
BLANK	Decachlorobiphenyl	2051-24-3	857.03	85.700	% Recov	09/09/03	50.000	150.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

2 - 29

SDG Number: WSCF20031154  
 Matrix: SOLID  
 Test: PCBs complete list

SAF Number: F03-006  
 Sample Date:  
 Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Tetrachloro-m-xylene	877-09-8	902.28	90.200	% Recov	09/09/03	50.000	150.000	
LCS	Aroclor-1260	11096-82-5	948.86	94.900	% Recov	09/09/03	70.000	130.000	
LCS	Decachlorobiphenyl	2051-24-3	764.80	76.500	% Recov	09/09/03	50.000	150.000	
LCS	Tetrachloro-m-xylene	877-09-8	809.23	80.900	% Recov	09/09/03	50.000	150.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

2 - 30

SDG Number: WSCF20031154

Matrix: SOLID

Test: WTPH-D TPH Diesel Range (Wa)

SAF Number: F03-006

Sample Date: 08/22/03

Receive Date: 08/25/03

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
---------	---------	-------	----------	----------	-------	---------------	-------------	-------------	----

Lab ID: W030000723

## BATCH QC ASSOCIATED WITH SAMPLE

SURR	ortho-Terphenyl	Surr	84-15-1	27409	93.200	% Recov	09/08/03	70.000	130.000
------	-----------------	------	---------	-------	--------	---------	----------	--------	---------

Lab ID: W030000789

## BATCH QC ASSOCIATED WITH SAMPLE

MS	ortho-Terphenyl	Surr	84-15-1	24295	98.000	% Recov	09/09/03	70.000	130.000
MS	Total Pet. Hydrocarbons Diesel		TPHDIESEL	91228	73.600	% Recov	09/09/03	75.000	125.000
MSD	ortho-Terphenyl	Surr	84-15-1	20720	83.500	% Recov	09/09/03	70.000	130.000
MSD	Total Pet. Hydrocarbons Diesel		TPHDIESEL	97917	78.900	% Recov	09/09/03	75.000	125.000
SPK-RPD	ortho-Terphenyl	Surr	84-15-1	83.500	15.978	RPD	09/08/03	0.000	20.000
SPK-RPD	Total Pet. Hydrocarbons Diesel		TPHDIESEL	78.900	6.951	RPD	09/08/03	0.000	20.000

## BATCH QC

BLANK	Kerosene		TPHKEROSENE	< 3800	n/a	ug/Kg	09/08/03	0.000	100.000	U
BLANK	ortho-Terphenyl	Surr	84-15-1	24630	98.500	ug/Kg	09/08/03	70.000	130.000	
BLANK	Total Pet. Hydrocarbons Diesel		TPHDIESEL	< 3800	n/a	ug/Kg	09/08/03	0.000	300.000	U
LCS	Kerosene		TPHKEROSENE	100640	80.500	% Recove	09/08/03	70.000	130.000	
LCS	ortho-Terphenyl	Surr	84-15-1	24278	97.100	% Recov	09/08/03	70.000	130.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20031154

Matrix: SOLID

Test: ICP-2008 MS All possible metal

SAF Number: F03-006

Sample Date: 08/14/03

Receive Date: 08/14/03

2 - 31

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
---------	---------	-------	----------	----------	-------	---------------	-------------	-------------	----

Lab ID: W030000715

BATCH QC ASSOCIATED WITH SAMPLE

MS	Silver	7440-22-4	377.8	93.608	% Recov	09/15/03	70.000	130.000	
MS	Arsenic	7440-38-2	381.6	94.549	% Recov	09/15/03	70.000	130.000	
MS	Barium	7440-39-3	353.9	87.686	% Recov	09/15/03	70.000	130.000	
MS	Beryllium	7440-41-7	347.8	86.174	% Recov	09/15/03	70.000	130.000	
MS	Chromium	7440-47-3	360.5	89.321	% Recov	09/15/03	70.000	130.000	
MS	Copper	7440-50-8	356.5	88.330	% Recov	09/15/03	70.000	130.000	
MS	Mercury	7439-97-6	23.5	116.337	% Recov	09/15/03	70.000	130.000	
MS	Nickel	7440-02-0	352.8	87.413	% Recov	09/15/03	70.000	130.000	
MS	Lead	7439-92-1	359	88.949	% Recov	09/15/03	70.000	130.000	
MS	Antimony	7440-36-0	396.1	98.142	% Recov	09/15/03	70.000	130.000	
MS	Uranium	7440-61-1	365.3	90.510	% Recov	09/15/03	70.000	130.000	
MSD	Silver	7440-22-4	372.2	92.220	% Recov	09/15/03	70.000	130.000	
MSD	Arsenic	7440-38-2	361	89.445	% Recov	09/15/03	70.000	130.000	
MSD	Barium	7440-39-3	340.7	84.415	% Recov	09/15/03	70.000	130.000	
MSD	Beryllium	7440-41-7	334	82.755	% Recov	09/15/03	70.000	130.000	
MSD	Chromium	7440-47-3	350.8	86.918	% Recov	09/15/03	70.000	130.000	
MSD	Copper	7440-50-8	352.3	87.289	% Recov	09/15/03	70.000	130.000	
MSD	Mercury	7439-97-6	23.03	114.010	% Recov	09/15/03	70.000	130.000	
MSD	Nickel	7440-02-0	341.5	84.613	% Recov	09/15/03	70.000	130.000	
MSD	Lead	7439-92-1	348.3	86.298	% Recov	09/15/03	70.000	130.000	
MSD	Antimony	7440-36-0	381.4	94.500	% Recov	09/15/03	70.000	130.000	
MSD	Uranium	7440-61-1	354.5	87.834	% Recov	09/15/03	70.000	130.000	

Lab ID: W030000723

BATCH QC ASSOCIATED WITH SAMPLE

MS	Silver	7440-22-4	368.4	92.843	% Recov	09/15/03	70.000	130.000	
----	--------	-----------	-------	--------	---------	----------	--------	---------	--

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20031154

Matrix: SOLID

Test: ICP-2008 MS All possible metal

SAF Number: F03-006

Sample Date: 08/22/03

Receive Date: 08/25/03

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Arsenic	7440-38-2	365.756	92.176	% Recov	09/15/03	70.000	130.000	
MS	Barium	7440-39-3	357.11	89.997	% Recov	09/15/03	70.000	130.000	
MS	Beryllium	7440-41-7	352.3	88.785	% Recov	09/15/03	70.000	130.000	
MS	Chromium	7440-47-3	342.81	86.394	% Recov	09/15/03	70.000	130.000	
MS	Copper	7440-50-8	336.62	84.834	% Recov	09/15/03	70.000	130.000	
MS	Mercury	7439-97-6	22.33	112.778	% Recov	09/15/03	70.000	130.000	
MS	Nickel	7440-02-0	330.67	83.334	% Recov	09/15/03	70.000	130.000	
MS	Lead	7439-92-1	357.9	90.197	% Recov	09/15/03	70.000	130.000	
MS	Antimony	7440-36-0	363.8	91.683	% Recov	09/15/03	70.000	130.000	
MS	Uranium	7440-61-1	360.3	90.801	% Recov	09/15/03	70.000	130.000	
MSD	Silver	7440-22-4	384.8	96.976	% Recov	09/15/03	70.000	130.000	
MSD	Arsenic	7440-38-2	378.756	95.453	% Recov	09/15/03	70.000	130.000	
MSD	Barium	7440-39-3	366.31	92.316	% Recov	09/15/03	70.000	130.000	
MSD	Beryllium	7440-41-7	355.3	89.541	% Recov	09/15/03	70.000	130.000	
MSD	Chromium	7440-47-3	353.61	89.115	% Recov	09/15/03	70.000	130.000	
MSD	Copper	7440-50-8	347.42	87.555	% Recov	09/15/03	70.000	130.000	
MSD	Mercury	7439-97-6	23.02	116.263	% Recov	09/15/03	70.000	130.000	
MSD	Nickel	7440-02-0	341.57	86.081	% Recov	09/15/03	70.000	130.000	
MSD	Lead	7439-92-1	369.5	93.120	% Recov	09/15/03	70.000	130.000	
MSD	Antimony	7440-36-0	374.8	94.456	% Recov	09/15/03	70.000	130.000	
MSD	Uranium	7440-61-1	370.1	93.271	% Recov	09/15/03	70.000	130.000	

Lab ID: W030000727

BATCH QC ASSOCIATED WITH SAMPLE

MS	Silver	7440-22-4	364.006	91.093	% Recov	09/15/03	70.000	130.000	
MS	Arsenic	7440-38-2	369.881	92.563	% Recov	09/15/03	70.000	130.000	
MS	Barium	7440-39-3	341.31	85.413	% Recov	09/15/03	70.000	130.000	
MS	Beryllium	7440-41-7	353.9	88.564	% Recov	09/15/03	70.000	130.000	
MS	Chromium	7440-47-3	348.28	87.157	% Recov	09/15/03	70.000	130.000	
MS	Copper	7440-50-8	343	85.836	% Recov	09/15/03	70.000	130.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

2 - 33

SDG Number: WSCF20031154

Matrix: SOLID

Test: ICP-2008 MS All possible metal

SAF Number: F03-006

Sample Date: 08/26/03

Receive Date: 08/26/03

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Mercury	7439-97-6	22.41	112.050	% Recov	09/15/03	70.000	130.000	
MS	Nickel	7440-02-0	339.03	84.842	% Recov	09/15/03	70.000	130.000	
MS	Lead	7439-92-1	360.6	90.240	% Recov	09/15/03	70.000	130.000	
MS	Antimony	7440-36-0	359.8	90.040	% Recov	09/15/03	70.000	130.000	
MS	Uranium	7440-61-1	362.3	90.666	% Recov	09/15/03	70.000	130.000	
MSD	Silver	7440-22-4	389.506	97.474	% Recov	09/15/03	70.000	130.000	
MSD	Arsenic	7440-38-2	386.981	96.842	% Recov	09/15/03	70.000	130.000	
MSD	Barium	7440-39-3	355.41	88.941	% Recov	09/15/03	70.000	130.000	
MSD	Beryllium	7440-41-7	362.9	90.816	% Recov	09/15/03	70.000	130.000	
MSD	Chromium	7440-47-3	361.28	90.410	% Recov	09/15/03	70.000	130.000	
MSD	Copper	7440-50-8	361.1	90.365	% Recov	09/15/03	70.000	130.000	
MSD	Mercury	7439-97-6	23.63	118.150	% Recov	09/15/03	70.000	130.000	
MSD	Nickel	7440-02-0	347.13	86.869	% Recov	09/15/03	70.000	130.000	
MSD	Lead	7439-92-1	373.5	93.468	% Recov	09/15/03	70.000	130.000	
MSD	Antimony	7440-36-0	376.9	94.319	% Recov	09/15/03	70.000	130.000	
MSD	Uranium	7440-61-1	376.6	94.244	% Recov	09/15/03	70.000	130.000	
<b>BATCH QC</b>									
BLANK	Silver	7440-22-4	<0.2	n/a	ug/L	09/15/03	-0.440	0.440	U
BLANK	Arsenic	7440-38-2	<0.3	n/a	ug/L	09/15/03	-0.660	0.660	U
BLANK	Barium	7440-39-3	<0.2	n/a	ug/L	09/15/03	-0.440	0.440	U
BLANK	Beryllium	7440-41-7	<0.3	n/a	ug/L	09/15/03	-0.660	0.660	U
BLANK	Chromium	7440-47-3	<0.3	n/a	ug/L	09/15/03	-0.660	0.660	U
BLANK	Copper	7440-50-8	<0.5	n/a	ug/L	09/15/03	-1.100	1.100	U
BLANK	Mercury	7439-97-6	<0.1	n/a	ug/L	09/15/03	-0.220	0.220	U
BLANK	Nickel	7440-02-0	<0.5	n/a	ug/L	09/15/03	-1.100	1.100	U
BLANK	Lead	7439-92-1	<1.2	n/a	ug/L	09/15/03	-2.640	2.640	U
BLANK	Antimony	7440-36-0	<0.5	n/a	ug/L	09/15/03	-1.100	1.100	U
BLANK	Uranium	7440-61-1	<0.1	n/a	ug/L	09/15/03	-0.220	0.220	U
LCS	Silver	7440-22-4	168.7	141.765	% Recov	09/15/03	85.000	115.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20031154

Matrix: SOLID

Test: ICP-2008 MS All possible metal

SAF Number: F03-006

Sample Date:

Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	Arsenic	7440-38-2	198	101.538	% Recov	09/15/03	85.000	115.000	
LCS	Barium	7440-39-3	381.8	97.398	% Recov	09/15/03	85.000	115.000	
LCS	Beryllium	7440-41-7	73.36	97.424	% Recov	09/15/03	85.000	115.000	
LCS	Chromium	7440-47-3	80.8	93.410	% Recov	09/15/03	85.000	115.000	
LCS	Copper	7440-50-8	122	96.063	% Recov	09/15/03	85.000	115.000	
LCS	Mercury	7439-97-6	9.933	105.558	% Recov	09/15/03	85.000	115.000	
LCS	Nickel	7440-02-0	84.5	101.077	% Recov	09/15/03	85.000	115.000	
LCS	Lead	7439-92-1	93.19	98.614	% Recov	09/15/03	85.000	115.000	
LCS	Antimony	7440-36-0	124.8	90.435	% Recov	09/15/03	85.000	115.000	
LCS	Uranium	7440-61-1	371.9	95.851	% Recov	09/15/03	85.000	115.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

2 - 35

SDG Number: WSCF20031154  
 Matrix: SOLID  
 Test: Ammonia (N) by IC

SAF Number: F03-006  
 Sample Date: 08/22/03  
 Receive Date: 08/25/03

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
---------	---------	-------	----------	----------	-------	---------------	-------------	-------------	----

Lab ID: W030000723

## BATCH QC ASSOCIATED WITH SAMPLE

DUP	Ammonia (N) by IC	7664-41-7	3.57e-01	9.600	RPD	09/18/03	0.000	20.000	
MS	Ammonia (N) by IC	7664-41-7	1.58e-01	95.758	% Recov	09/18/03	75.000	125.000	
MSD	Ammonia (N) by IC	7664-41-7	1.51e-01	91.515	% Recov	09/18/03	75.000	125.000	

## BATCH QC

BLNK-PREP	Ammonia (N) by IC	7664-41-7	< 4.00e-3	n/a	Ratio	09/18/03		U
BLNK-PREP	Ammonia (N) by IC	7664-41-7	< 4.00e-3	n/a	Ratio	09/18/03		U
LCS	Ammonia (N) by IC	7664-41-7	7.54e +01	90.953	% Recov	09/18/03	80.000	120.000

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20031154  
 Matrix: SOLID  
 Test: Anions by Ion Chromatography

SAF Number: F03-006  
 Sample Date: 08/22/03  
 Receive Date: 08/25/03

2 - 36

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
<b>Lab ID: W030000723</b>									
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>									
DUP	Chloride	16887-00-6	2.06e+00	51.988	RPD	09/08/03	0.000	20.000	
DUP	Fluoride	16984-48-8	<3.50e-1	n/a	RPD	09/08/03	0.000	20.000	U
DUP	Nitrogen in Nitrite	NO2-N	<4.50e-1	n/a	RPD	09/08/03	0.000	20.000	U
DUP	Nitrogen in Nitrate	NO3-N	4.66e+01	3.050	RPD	09/08/03	0.000	20.000	U
DUP	Phosphate	14265-44-2	<6.50e-1	n/a	RPD	09/08/03	0.000	20.000	U
DUP	Sulfate	14808-79-8	2.28e+01	3.024	RPD	09/08/03	0.000	20.000	
MS	Chloride	16887-00-6	9.21e-01	93.030	% Recov	09/08/03	75.000	125.000	
MS	Fluoride	16984-48-8	4.65e-01	95.092	% Recov	09/08/03	75.000	125.000	
MS	Nitrogen in Nitrite	NO2-N	5.07e-01	100.595	% Recov	09/08/03	75.000	125.000	
MS	Nitrogen in Nitrate	NO3-N	4.97e-01	111.435	% Recov	09/08/03	75.000	125.000	
MS	Phosphate	14265-44-2	8.24e-01	85.923	% Recov	09/08/03	75.000	125.000	
MS	Sulfate	14808-79-8	1.89e+00	95.939	% Recov	09/08/03	75.000	125.000	
MSD	Chloride	16887-00-6	9.11e-01	92.020	% Recov	09/08/03	75.000	125.000	
MSD	Fluoride	16984-48-8	4.77e-01	97.546	% Recov	09/08/03	75.000	125.000	
MSD	Nitrogen in Nitrite	NO2-N	4.98e-01	98.810	% Recov	09/08/03	75.000	125.000	
MSD	Nitrogen in Nitrate	NO3-N	4.50e-01	100.897	% Recov	09/08/03	75.000	125.000	
MSD	Phosphate	14265-44-2	8.47e-01	88.321	% Recov	09/08/03	75.000	125.000	
MSD	Sulfate	14808-79-8	2.02e+00	102.538	% Recov	09/08/03	75.000	125.000	
<b>BATCH QC</b>									
BLANK	Chloride	16887-00-6	<1.40e-2	n/a	mg/L	09/08/03	0.000	300.000	U
BLANK	Chloride	16887-00-6	<1.40e-2	n/a	mg/L	09/08/03	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<7.00e-3	n/a	mg/L	09/08/03	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<7.00e-3	n/a	mg/L	09/08/03	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<9.00e-3	n/a	mg/L	09/08/03	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<9.00e-3	n/a	mg/L	09/08/03	0.000	300.000	U

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20031154

Matrix: SOLID

Test: Anions by Ion Chromatography

SAF Number: F03-006

Sample Date:

Receive Date:

2 - 37

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Nitrogen in Nitrate	NO3-N	<5.00e-3	n/a	mg/L	09/08/03	0.000	300.000	U
BLANK	Nitrogen in Nitrate	NO3-N	<5.00e-3	n/a	mg/L	09/08/03	0.000	300.000	U
BLANK	Phosphate	14265-44-2	<1.30e-2	n/a	mg/L	09/08/03	0.000	300.000	U
BLANK	Phosphate	14265-44-2	<1.30e-2	n/a	mg/L	09/08/03	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<2.40e-2	n/a	mg/L	09/08/03	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<2.40e-2	n/a	mg/L	09/08/03	0.000	300.000	U
LCS	Chloride	16887-00-6	1.86e+02	93.000	% Recov	09/08/03	80.000	120.000	
LCS	Fluoride	16984-48-8	8.90e+01	90.172	% Recov	09/08/03	80.000	120.000	
LCS	Nitrogen in Nitrite	NO2-N	9.56e+01	95.600	% Recov	09/08/03	80.000	120.000	
LCS	Nitrogen in Nitrate	NO3-N	9.24e+01	102.553	% Recov	09/08/03	80.000	120.000	
LCS	Phosphate	14265-44-2	1.81e+02	93.395	% Recov	09/08/03	80.000	120.000	
LCS	Sulfate	14808-79-8	3.77e+02	94.486	% Recov	09/08/03	80.000	120.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20031154  
 Matrix: SOLID  
 Test: Alcohols, Glycols - 8015

SAF Number: F03-006  
 Sample Date: 08/22/03  
 Receive Date: 08/25/03

2 - 38

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
---------	---------	-------	----------	----------	-------	---------------	-------------	-------------	----

**Lab ID: W030000723**  
**BATCH QC ASSOCIATED WITH SAMPLE**

MS	2-Bromoethanol	540-51-2	9700	97.000	%Recover	09/03/03	70.000	125.000	
MS	Diethyl ether	60-29-7	7500	75.000	%Recover	09/03/03	75.000	125.000	
MS	Ethylene glycol	107-21-1	7400	74.000	%Recover	09/03/03	75.000	125.000	
MS	Methanol	67-56-1	11000	110.000	%Recover	09/03/03	75.000	125.000	
MSD	2-Bromoethanol	540-51-2	6800	68.000	%Recover	09/03/03	70.000	125.000	
MSD	Diethyl ether	60-29-7	7800	78.000	%Recover	09/03/03	75.000	125.000	
MSD	Ethylene glycol	107-21-1	6800	68.000	%Recover	09/03/03	75.000	125.000	
MSD	Methanol	67-56-1	9800	98.000	%Recover	09/03/03	75.000	125.000	
SPK-RPD	2-Bromoethanol	540-51-2	68.000	35.152	RPD	09/03/03	0.000	20.000	
SPK-RPD	Diethyl ether	60-29-7	78.000	3.922	RPD	09/03/03	0.000	20.000	
SPK-RPD	Ethylene glycol	107-21-1	68.000	8.451	RPD	09/03/03	0.000	20.000	
SPK-RPD	Methanol	67-56-1	98.000	11.538	RPD	09/03/03	0.000	20.000	

**BATCH QC**

BLANK	2-Bromoethanol	540-51-2	8200	0.820	ug/Kg	09/03/03	0.000	10.000	
BLANK	Diethyl ether	60-29-7	<5000	n/a	ug/Kg	09/03/03	0.000	10.000	U
BLANK	Ethylene glycol	107-21-1	<5000	n/a	ug/Kg	09/03/03	0.000	5.000	U
BLANK	Methanol	67-56-1	<1000	n/a	ug/Kg	09/03/03	0.000	10.000	U
LCS	2-Bromoethanol	540-51-2	7200	72.000	%Recover	09/03/03	70.000	130.000	
LCS	Diethyl ether	60-29-7	9300	93.000	%Recover	09/03/03	70.000	130.000	
LCS	Ethylene glycol	107-21-1	11800	118.000	%Recover	09/03/03	70.000	130.000	
LCS	Methanol	67-56-1	11000	110.000	%Recover	09/03/03	70.000	130.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20031154

Matrix: SOLID

Test: NWTPh-GX TPH Gasoline Range

SAF Number: F03-006

Sample Date: 08/22/03

Receive Date: 08/25/03

2 - 39

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
---------	---------	-------	----------	----------	-------	---------------	-------------	-------------	----

Lab ID: W030000723

## BATCH QC ASSOCIATED WITH SAMPLE

DUP	Total Pet. Hydrocarbons Gas	TPHGASOLINE	< 250	n/a	RPD	09/03/03	0.000	20.000	U
MS	Total Pet. Hydrocarbons Gas	TPHGASOLINE	3200	92.754	% Recov	09/03/03	50.000	150.000	
MSD	Total Pet. Hydrocarbons Gas	TPHGASOLINE	3300	95.652	% Recov	09/03/03	50.000	150.000	
SPK-RPD	Total Pet. Hydrocarbons Gas	TPHGASOLINE	95.652	3.076	RPD	09/03/03	0.000	20.000	

## BATCH QC

BLANK	Total Pet. Hydrocarbons Gas	TPHGASOLINE	< 250	n/a	mg/L	09/03/03	0.000	300.000	U
LCS	Total Pet. Hydrocarbons Gas	TPHGASOLINE	3800	110.145	% Recov	09/03/03	85.000	115.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

2 - 40

SDG Number: WSCF20031154

Matrix: SOLID

Test: Gamma Energy Analysis-grd H<sub>2</sub>O

SAF Number: F03-006

Sample Date: 08/22/03

Receive Date: 08/25/03

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
<b>Lab ID: W030000723</b>									
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>									
DUP	Actinium-228	14331-83-0	9.98e-01	0.805	RPD	09/30/03	0.000	20.000	
DUP	Americium-241	14596-10-2	U-1.8Be-2	n/a	RPD	09/30/03	0.000	20.000	
DUP	Bismuth-212	14913-49-6	7.31e-01	8.857	RPD	09/30/03	0.000	20.000	
DUP	Bismuth-214	14733-03-0	7.34e-01	2.555	RPD	09/30/03	0.000	20.000	
DUP	Cerium-144	14762-78-8	U-1.34e-2	n/a	RPD	09/30/03	0.000	20.000	
DUP	Cobalt-60	10198-40-0	5.86e-02	1.721	RPD	09/30/03	0.000	20.000	
DUP	Cesium-134	13967-70-9	U4.82e-02	n/a	RPD	09/30/03	0.000	20.000	
DUP	Cesium-137	10045-97-3	U5.97e-03	n/a	RPD	09/30/03	0.000	20.000	
DUP	Europium-152	14683-23-9	U-1.35e-2	n/a	RPD	09/30/03	0.000	20.000	
DUP	Europium-154	15585-10-1	U-3.00e-2	n/a	RPD	09/30/03	0.000	20.000	
DUP	Europium-155	14391-16-3	U3.79e-02	n/a	RPD	09/30/03	0.000	20.000	
DUP	Niobium-94	14681-63-1	U4.50e-03	n/a	RPD	09/30/03	0.000	20.000	
DUP	Lead-212	15092-94-1	1.05e+00	0.957	RPD	09/30/03	0.000	20.000	
DUP	Lead-214	15067-28-4	8.03e-01	6.623	RPD	09/30/03	0.000	20.000	
DUP	Radium-226	13982-63-3	7.34e-01	2.555	RPD	09/30/03	0.000	20.000	
DUP	Radium-228	15262-20-1	9.98e-01	0.805	RPD	09/30/03	0.000	20.000	
DUP	Ruthenium-103	13968-53-1	U-4.67e-3	n/a	RPD	09/30/03	0.000	20.000	
DUP	Ruthenium-106	13967-48-1	U-8.39e-2	n/a	RPD	09/30/03	0.000	20.000	
DUP	Antimony-125	14234-35-6	U-2.04e-2	n/a	RPD	09/30/03	0.000	20.000	
DUP	Tin-113	13966-06-8	U3.52e-03	n/a	RPD	09/30/03	0.000	20.000	
DUP	Tin-126	15832-50-5	U2.50e-01	n/a	RPD	09/30/03	0.000	20.000	
DUP	Thorium-234	15065-10-8	U1.06e+00	n/a	RPD	09/30/03	0.000	20.000	
DUP	Thallium-208	14913-50-9	3.15e-01	7.044	RPD	09/30/03	0.000	20.000	
DUP	Uranium-235	15117-96-1	U1.11e-01	n/a	RPD	09/30/03	0.000	20.000	
DUP	Zinc-65	13982-39-3	U9.42e-02	n/a	RPD	09/30/03	0.000	20.000	

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20031154

Matrix: SOLID

Test: Gamma Energy Analysis-grd H<sub>2</sub>O

SAF Number: F03-006

Sample Date:

Receive Date:

2 - 41

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
<b>BATCH QC</b>									
BLANK	Actinium-228	14331-83-0	4.70e-02	0.047	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Americium-241	14596-10-2	U-3.50e-2	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Bismuth-212	14913-49-6	U3.25e-02	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Bismuth-214	14733-03-0	8.09e-02	0.081	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Cerium-144	14762-78-8	U2.14e-02	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Cobalt-60	10198-40-0	U-7.60e-4	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Cesium-134	13967-70-9	U4.26e-03	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Cesium-137	10045-97-3	U-1.81e0	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Europium-152	14683-23-9	U1.77e-03	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Europium-154	15585-10-1	U-2.39e-3	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Europium-155	14391-16-3	U8.28e-03	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Niobium-94	14681-63-1	U2.54e-03	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Lead-212	15092-94-1	4.65e-02	0.046	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Lead-214	15067-28-4	9.27e-02	0.093	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Radium-226	13982-63-3	8.09e-02	0.081	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Radium-228	15262-20-1	4.70e-02	0.047	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Ruthenium-103	13968-53-1	U2.73e-03	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Ruthenium-106	13967-48-1	U1.45e-02	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Antimony-125	14234-35-6	U-6.64e-3	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Tin-113	13966-06-8	U2.87e-04	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Tin-126	15832-50-5	U1.49e-03	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Thorium-234	15065-10-8	U-2.05e-1	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Thallium-208	14913-50-9	1.42e-02	0.014	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Uranium-235	15117-96-1	U1.25e-02	n/a	pCi/g	09/25/03	-10000.000	1000.000	
BLANK	Zinc-65	13982-39-3	U3.38e-03	n/a	pCi/g	09/25/03	-10000.000	1000.000	
LCS	Americium-241	14596-10-2	3.90e+03	99.490	% Recov	09/29/03	80.000	120.000	
LCS	Cobalt-60	10198-40-0	4.27e+03	101.909	% Recov	09/29/03	80.000	120.000	
LCS	Cesium-137	10045-97-3	3.69e+03	103.073	% Recov	09/29/03	80.000	120.000	

**T4180-03-SLF-043**

**ATTACHMENT 3**

**SAMPLE RECEIPT INFORMATION**

Consisting of 2 pages  
Cover page not included

TIK  
9/23/03

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Ground Water Protection Program

Richland, WA 99352  
Attn: Steve Trent

Customer Code: GPP  
PO#: 117504/ES20  
Group#: 20031154  
Project#: F03-006  
Proj Mgr: STEVE TRENT A0-21  
Phone: 373-5869

The following samples were received from you on 08/25/03. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample#	Sample Id	Matrix	Sample Date
Tests Scheduled			
W030000723	B173V7	GPP	TRENT Solid, or handle as if solid
		@2008	@8015GPP @AEA-30 @AEA-31 @AEA-32
		@GEA-GPP	@IC-30 @ICP-GPP @PCBGPP @SVOCGPP @TPHD
		@TPHG-WA	CN-02 NH4-IC PERSOLID PH-30

Test Acronym Description

Test Acronym	Description
@2008	ICP-2008 MS All possible metal
@8015GPP	Alcohols, Glycols - 8015
@AEA-30	Plutonium Isotopes by AEA
@AEA-31	Americium by AEA
@AEA-32	Uranium Isotopes by AEA
@GEA-GPP	Gamma Energy Analysis-grd H2O
@IC-30	Anions by Ion Chromatography
@ICP-GPP	ICP Metals Analysis, Grd H2O P
@PCBGPP	PCBs complete list
@SVOCGPP	SW-846 8270B Semi-Vols
@TPHD-WA	WTPH-D TPH Diesel Range (Wa)
@TPHG-WA	NWTPH-GX TPH Gasoline Range
CN-02	Cyanide by Midi/Spectrophotom
NH4-IC	Ammonia (N) by IC
PERSOLID	Percent Solids
PH-30	pH Soil and Waste Measurement

MAN

4/23/03

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-197	Page 1 of 1		
Collector Pope/Pfister/Hughes/Johansen		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N	Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location <del>ML 7-10-03</del> 216-A-36B (C3248) - 287.5-290'		(C4160)		SAF No. F03-006				
Ice Chest No.		Field Logbook No. HNP-N-3361		COA 117504ES10		Method of Shipment Federal Express				
Shipped To Waste Sampling & Characterization		Offsite Property No.				Bill of Lading/Air Bill No.				
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage		Preservation	Cool 4C	Cool 4C	Cool 4C					
		Type of Container	aG	Gs*	<del>50</del> 5					
		No. of Container(s)	1	2	1					
		Volume	40mL	40mL	400mL 500 mL					
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.				
SDG 20031154	Sample No.	Matrix *	Sample Date	Sample Time						
B173V7 WC30020723	SOIL	8/22/03	1645		X	X	X			
CHAIN OF POSSESSION		Sign/Print Names			SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From <i>JSH/8/22/03</i>	Date/Time 8/22/03 1645	Received By/Stored In MO-026	Date/Time <i>8/22/03 1800</i>		Report kerosene and diesel range compounds from WTPH-D analysis. FH acknowledges that holding times (less than 14 days) may not be met by the lab due to the radi characteristics.				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Time WI=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <i>MO-026 Fridy #1</i>	Date/Time 8/25/03 0830	Received By/Stored In <i>J SHOPE/KJG/8/25/03 0830</i>	Date/Time		(1) Semi-VOA - 8270A (TCL); Semi-VOA - 8270A (Add-On) (2-Butoxyethanol, Tributyl phosphate); TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G; PCBs - 8082 (2) Alcohols, Glycols, & Ketones - 8015 (Diethyl ether, Ethylene glycol, Methanol) (3) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Antimony-125, Cesium-134, Radium-226, Radium-228, Tin-126); Isotopic Plutonium; Americium-241; Isotopic Uranium; Trace Elements ICP/MS - 200.8 (Complete) (Antimony, Arsenic, Barium, Beryllium, Chromium, Copper, Lead, Mercury, Nickel, Silver, Uranium); ICP Metals - 6010A (Add-on) (Bismuth, Boron); IC Anions - 300.0 (Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate); Cyanide (Total) - 335.2; Cations (IC) - 300.7 (Nitrogen in ammonium); pH (Soil) - 9045					
Relinquished By/Removed From <i>JSH/8/25/03 0905</i>	Date/Time 8/25/03 0905	Received By/Stored In <i>KB/8/25/03 0905</i>	Date/Time <i>8/25/03 0905</i>							
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time							
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time							
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time							
LABORATORY SECTION	Received By	Title				Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time				